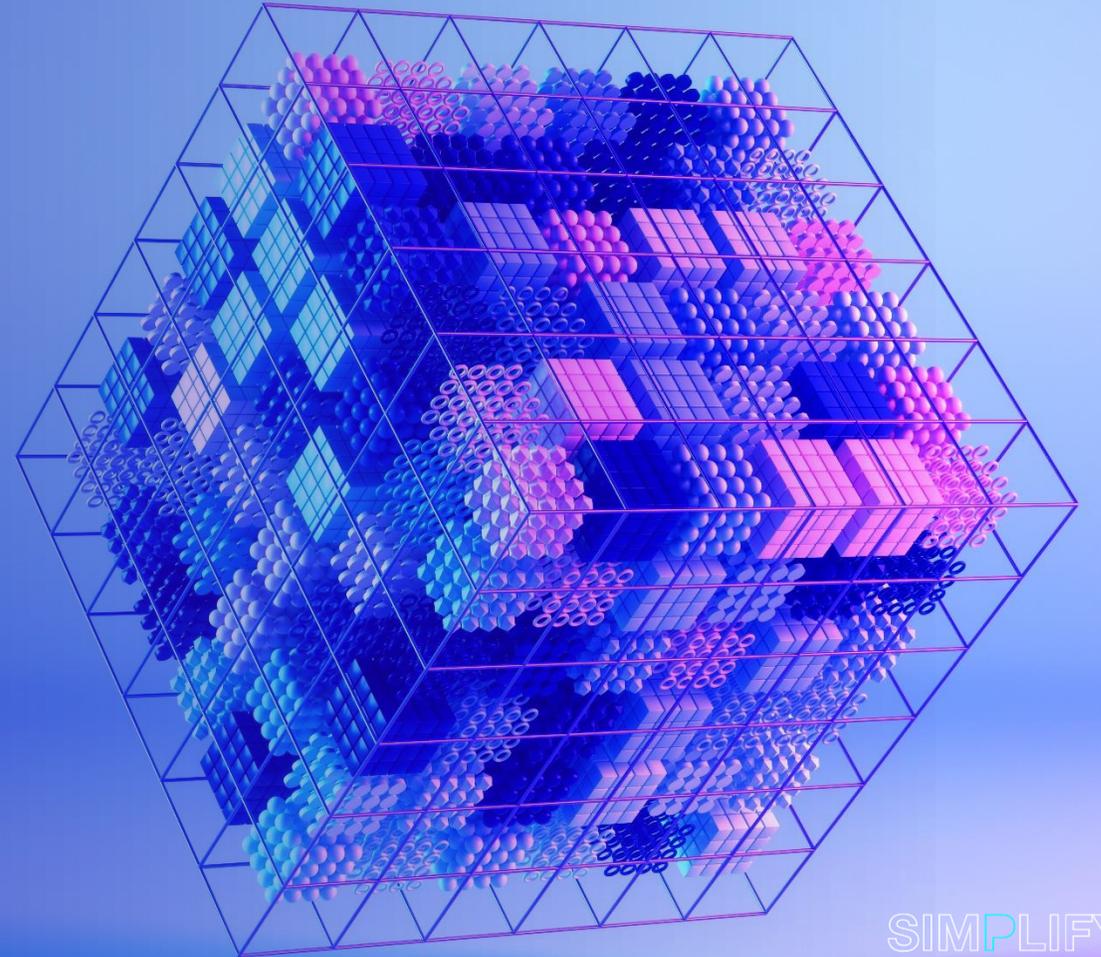


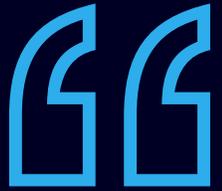
# Azure Cloud – Modernization of Apps, Data, & AI....are you ready?

John Thiele – Azure Solution Sales Specialist



JuiceIT2025

SIMPLIFY  
CONNECT  
PROTECT



# **Azure in Australia – Ten Years In....**

# Azure in Australia – Ten Years In



Launched in late **2014**, Azure has now been a part of the Australian IT landscape for ten years.



Local Data Centres and points of presence for ExpressRoute providing low latency connectivity and supporting data sovereignty

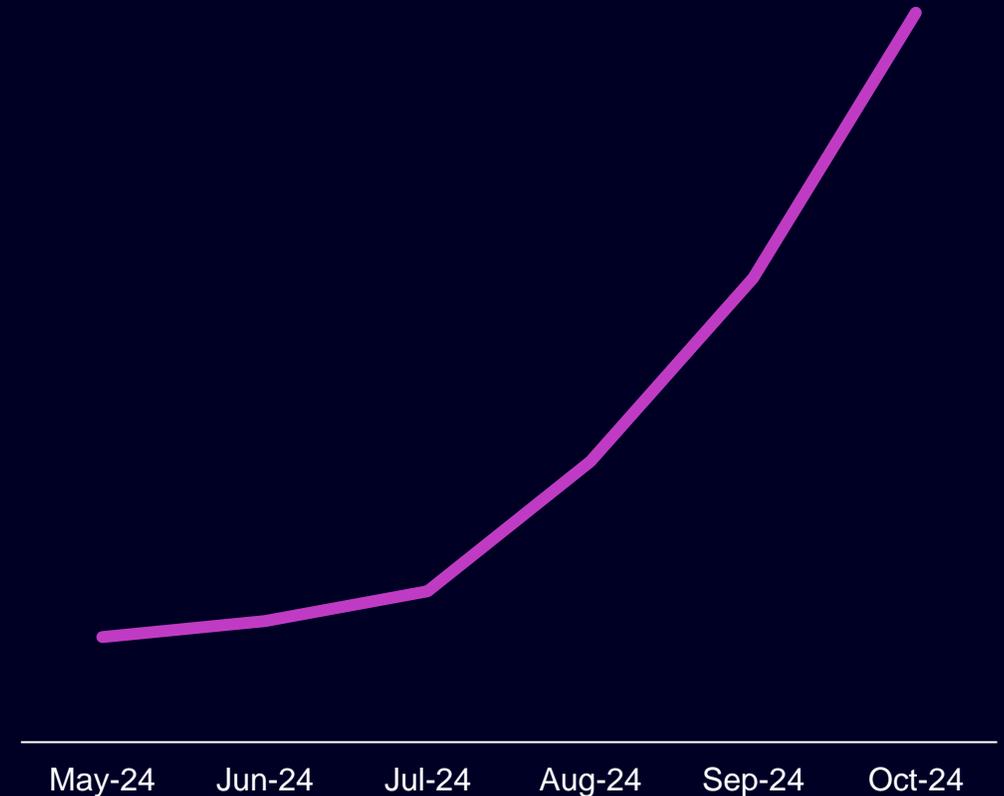


Azure services have grown to over **300** types of services, now joined by a range of cutting-edge AI services.

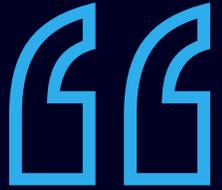


# Azure in Australia – Continued Investment

- Microsoft is investing \$5B over this year and next year to expand its hyperscale cloud computing and AI infrastructure, increasing its computing capacity by 250%.
- Azure Extended Zone to be deployed in Perth by mid-2025.
- Addition of cutting-edge AI services / models.



Azure Open AI Service Consumption



# AI-Ready Infrastructure

# How do I make Azure AI-Ready?

1. "How did Microsoft get **AI Ready**?"
2. "How do I **operationalize** my AI solution?"
3. "What is the baseline **landing zone** to get the AI solution running?"
4. "How do I get my AI solution to safely access my **data** sources?"
5. "What are the **networking** requirements for my AI solution?"
6. "How do we **migrate** and **secure** our estate to enable AI at scale?"
7. "How do I **secure** my AI solution?"
8. "How do I **monitor** the cost of the AI solution?"
9. "What **policies** and **protocols** do I need to comply?"

# AI-Ready Infrastructure

## Landing Zone

- Enterprise Landing Zone aligned to Cloud Adoption Framework (CAF) and Well-Architected Framework (WAF).
- Segregation of resources.
- Well defined management structure and roles-based access control.

## Data

- Unified, readily accessible data.
- Business continuity and data protection.
- Data security and encryption.

## Network

- Well-defined virtual network topology.
- Azure network security (Firewall, DDoS, NSG's, Network Watcher).
- Private Endpoints and Private Links.
- Azure DNS, DNS Zones, and Private DNS Resolver.

## Security



**Defender for Cloud:** secure your Azure services, threat protection for AI workloads.



**Sentinel:** raise AI solution security posture with SIEM, automation, and response.



**Front Door Services/WAF/DDoS:** leverage edge services for CDN, web-application firewall, and DDoS protection.



**APIM:** apply enhanced security controls for APIs.



**Security Copilot:** manage security posture with natural language response and threat intelligence.

## Management



**Azure Monitor and Log Analytics:** manage with application logs, dashboard reports, monitoring, and alerting.



**Azure Policy:** use Azure Policies to audit/enforce compliance settings for applications, data, and infrastructure.



**Azure Copilot:** enhance management with an AI assistant that knows your environment.

# Comprehensive guidance

Best practices to govern, manage, & secure AI workloads

## Cloud Adoption Framework (CAF)

Guidance for technical decision makers.

Includes AI Scenario



## Well-Architected Framework (WAF)

Foundational design for workload teams

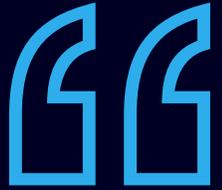
*Includes AI Workload Guidance*



## Azure Architecture Center (AAC)

Implementation guidance & solutions for use cases

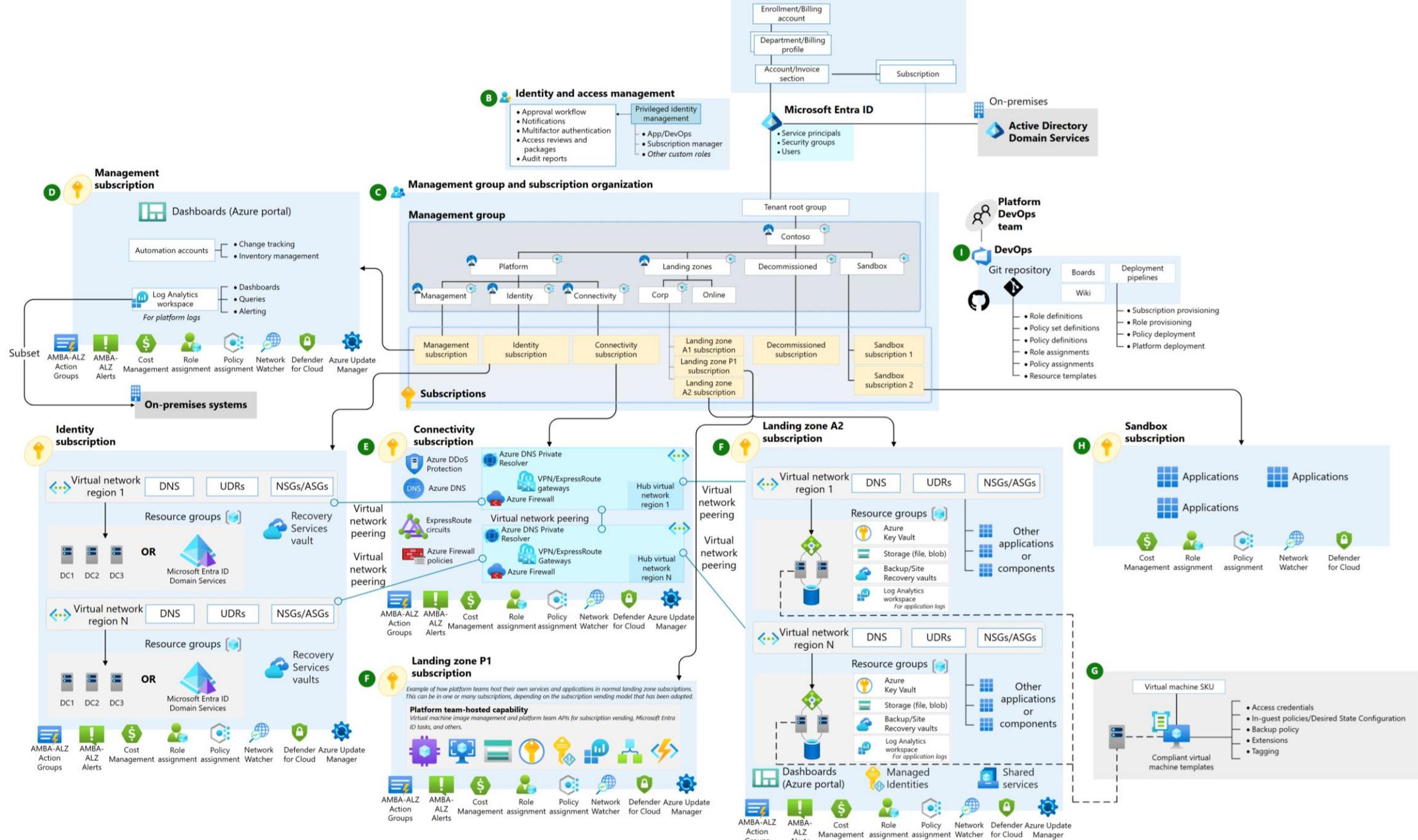
AI architectures & guides

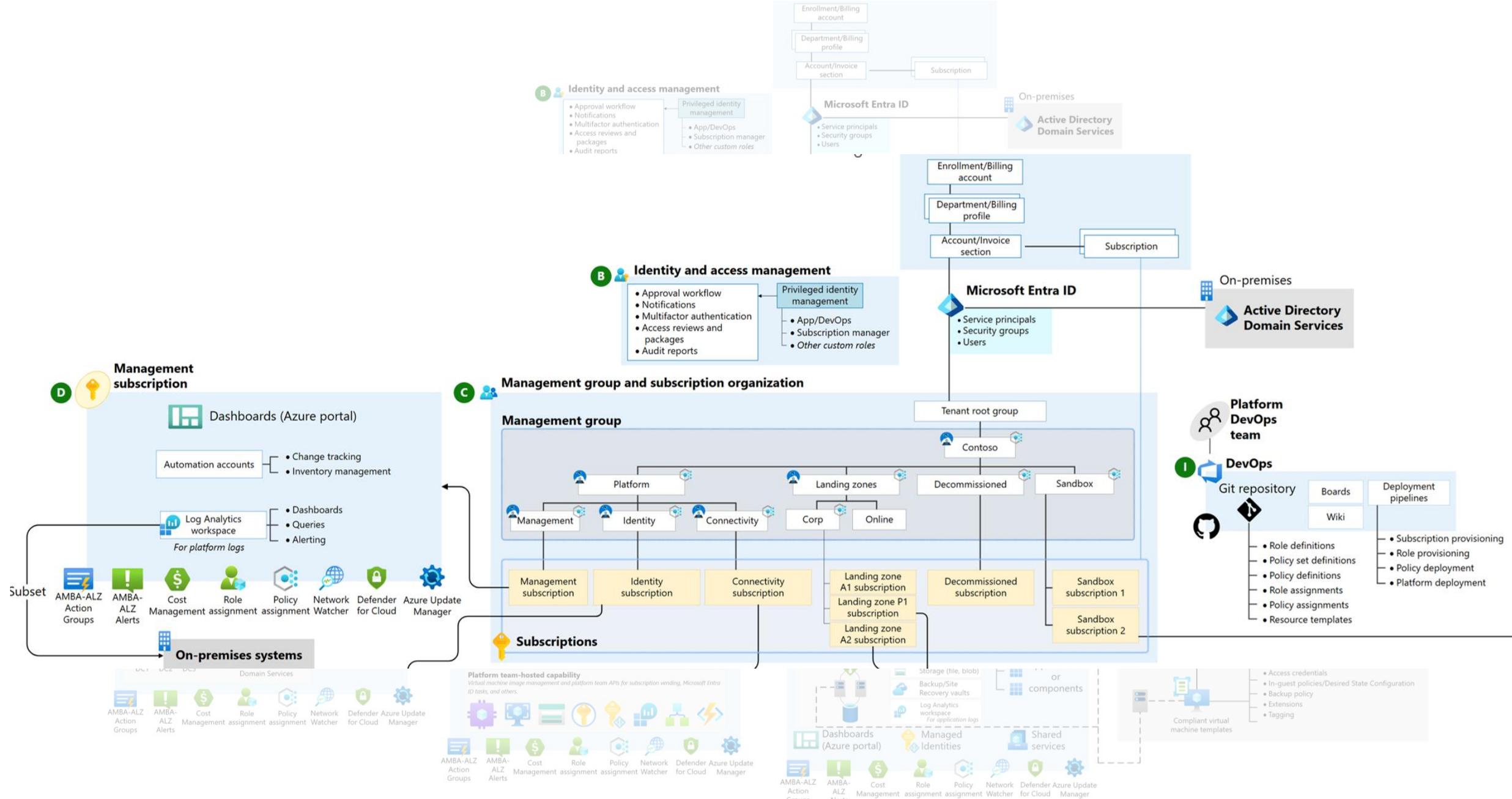


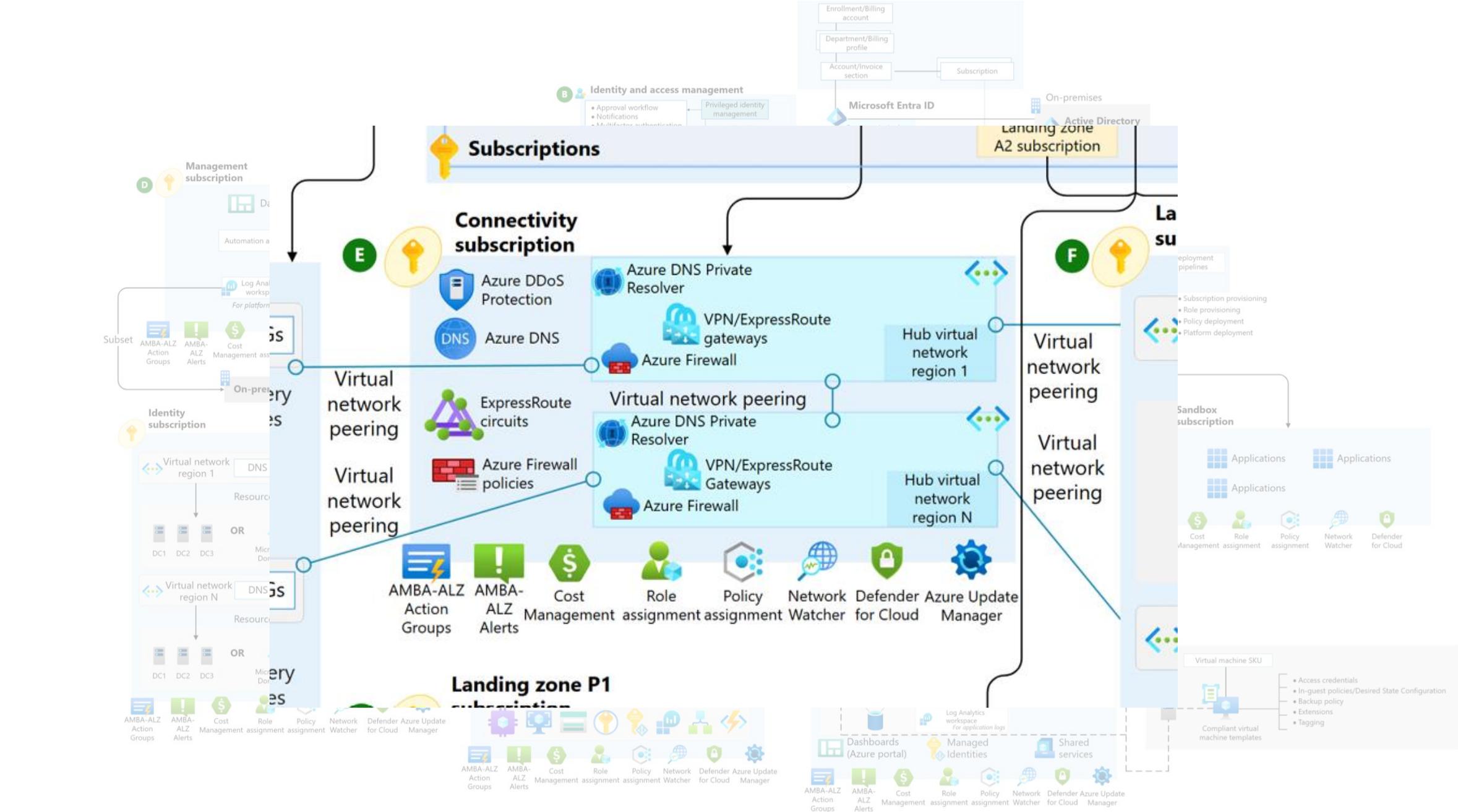
# Landing Zones and Core Infrastructure

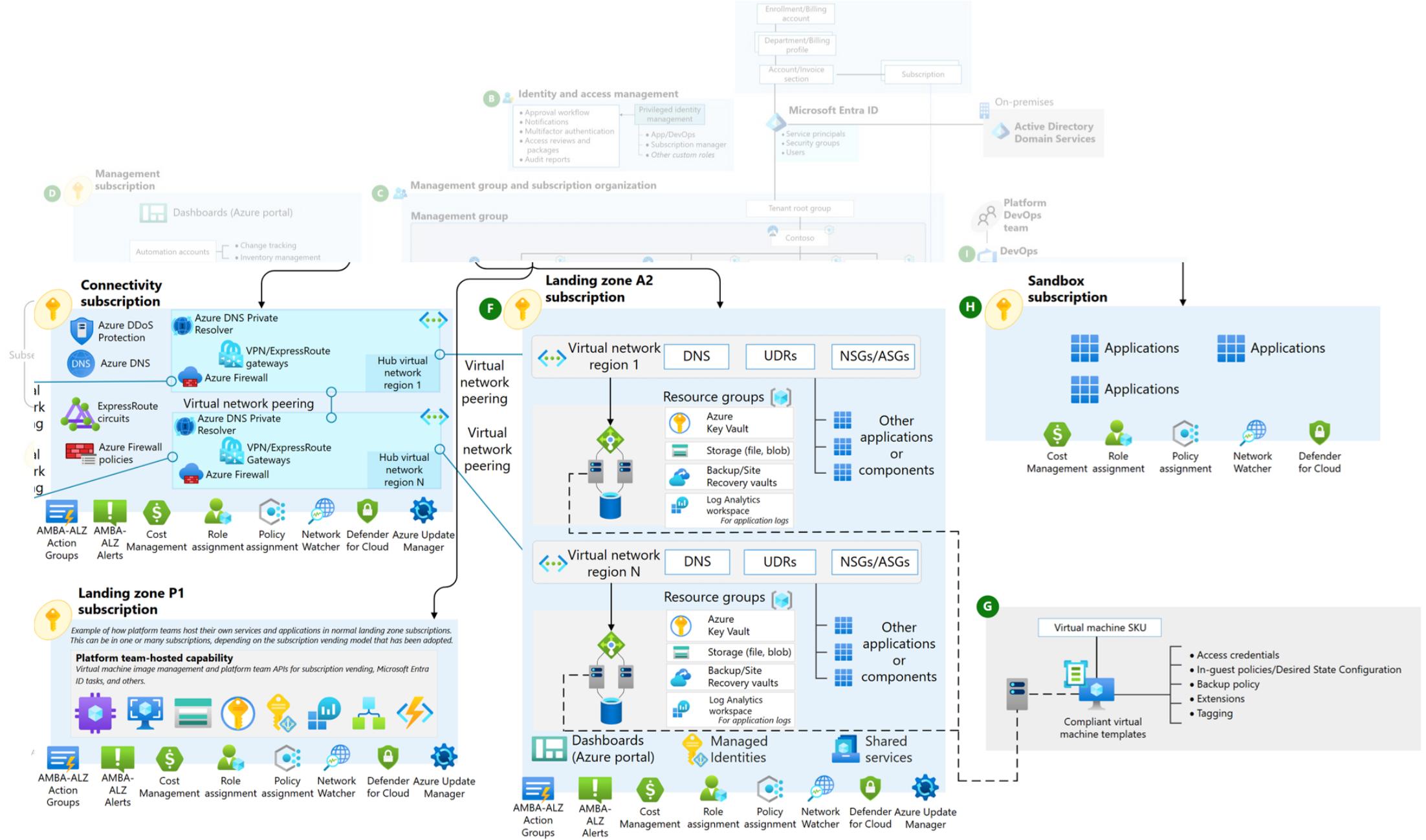
# Is your existing Landing Zone aligned to CAF/WAF?

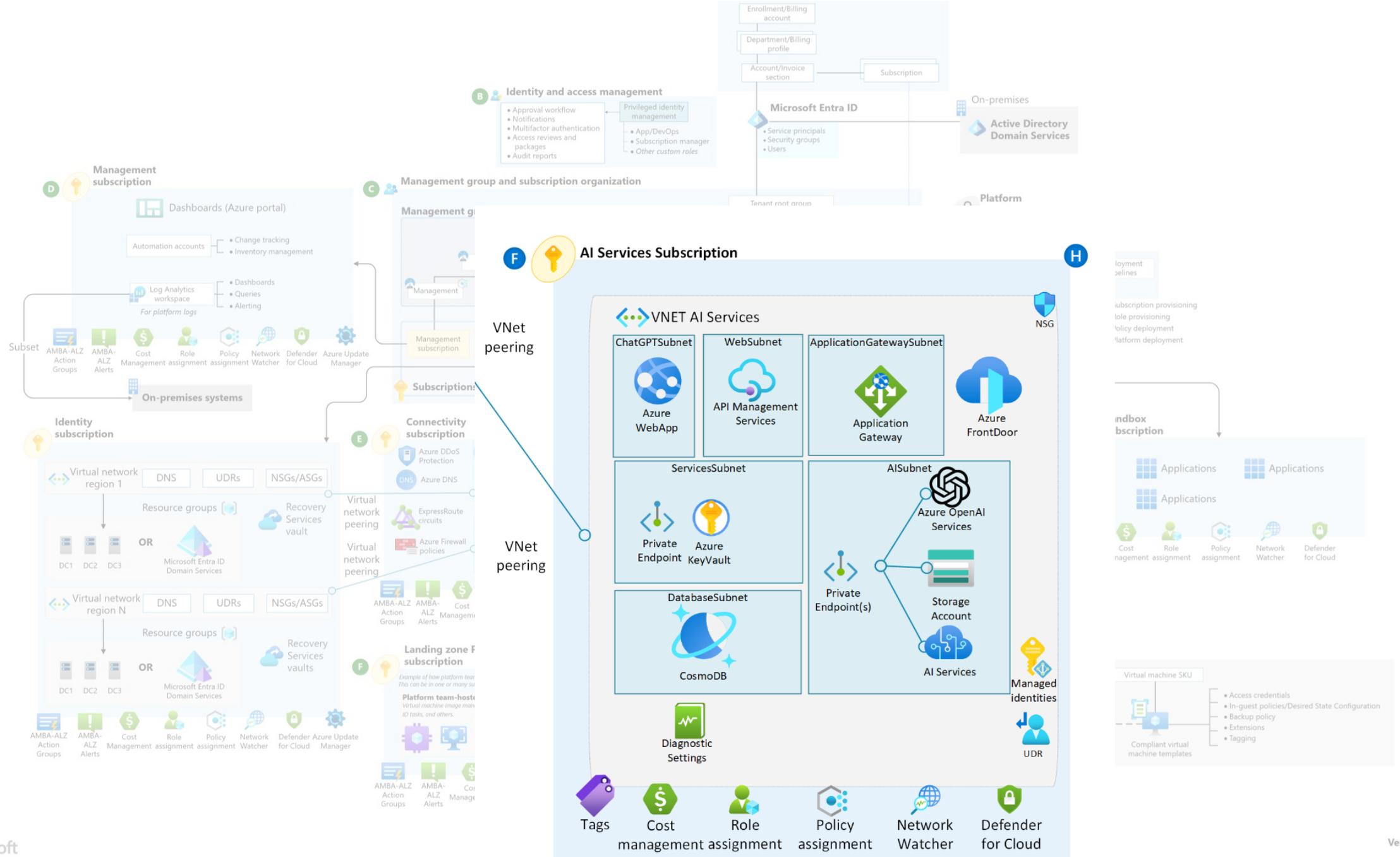
- Resource organisation? Management group structure, separation of resources in subscriptions, resource groups, naming, tagging?
- Well defined RBAC, secure access to resources?
- Network Topology? Hub and spoke, vWAN?
- Network security, firewall? Segmentation and secure network access?
- Governance? Policy, compliance, reporting?











# Azure Landing Zone Deployment

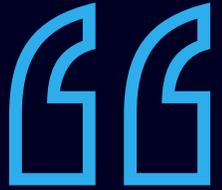
- Manual
- Use of Accelerators
  - Microsoft
  - Data#3
- Infrastructure-as-code
  - Bicep
  - Terraform
- Ongoing management and deployment

# Decision Point

- Deployment of **New** Azure Landing Zone (parallel to existing)
  - Design and deployment of new Azure Landing Zone aligned to CAF/WAF
  - Move of existing application subscriptions/resources under new Landing Zone
  - Inclusion of application Landing Zones / Resource Groups

vs.

- **Update** of existing Azure Landing Zone
  - Health assessment and remediation
  - Addition of application Landing Zones / Resource Groups
  - Update to network topology and addition of centralised network services



# Data and Analytics – a Foundation for AI

# Azure Data and Analytics Services

- Azure Database, SQL MI, SQL on VM, Azure Database or MySQL, Oracle Database, Cosmos DB, Apache Cassandra, MongoDB, PostgreSQL
- Azure Analysis Services
- Azure Data Factory
- Azure Data Explorer
- Azure Machine Learning
- Azure Synapse Analytics
- Azure Stream Analytics
- Databricks
- Data Lake
- Data Lake Analytics
- Event Hubs HDInsight
- ...Fabric
- Power-BI
- Purview
- Snowflake
- ....and more!

# Challenges Generating Value from Data



Siloed systems, poor-quality data



Costly integration and ongoing maintenance



Technical platforms requiring advanced skills and limited resources



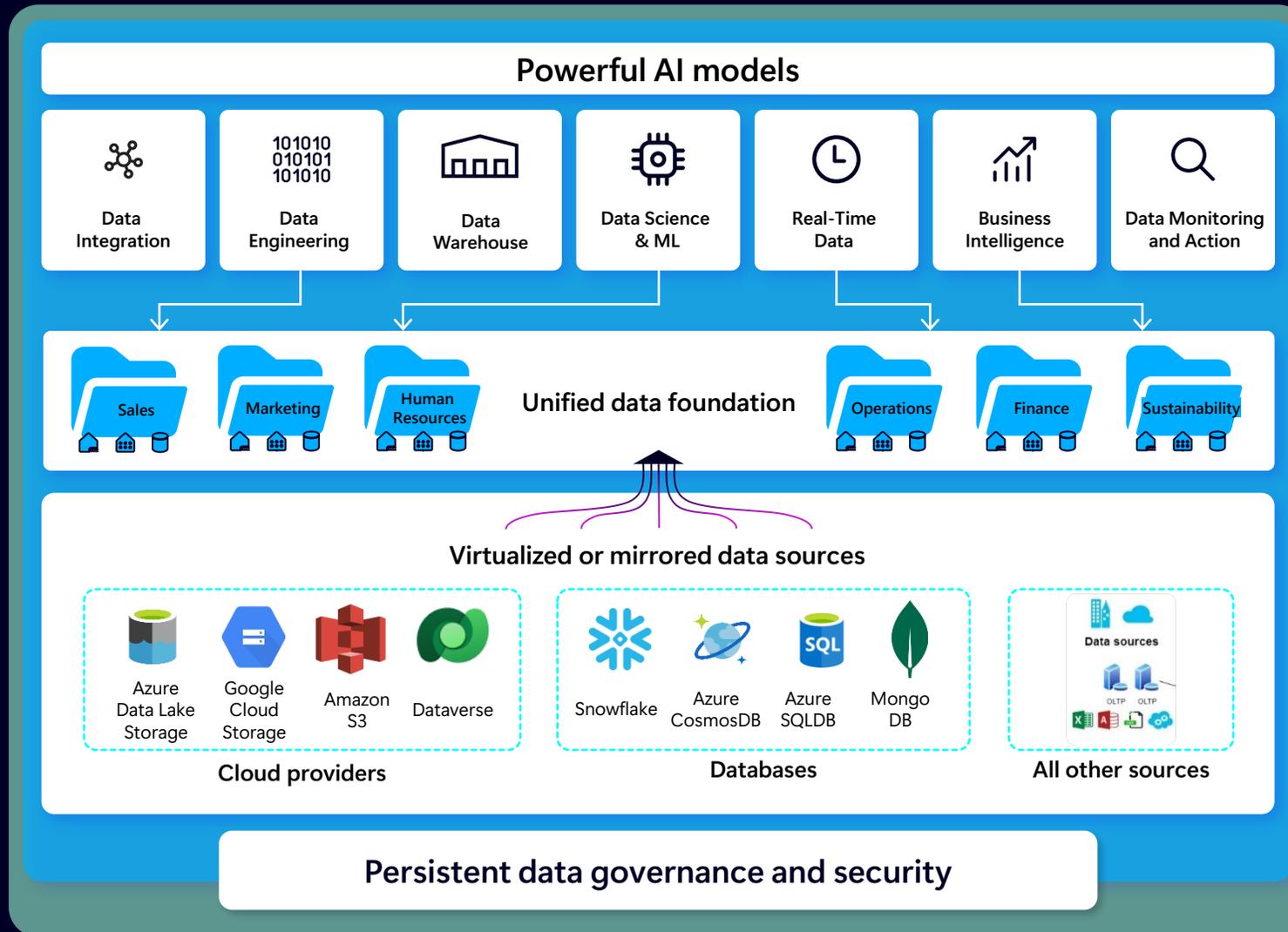
Data governance and security risks



Lagging BI and AI adoption

‘AI is only  
as good  
as the  
data it’s  
trained  
on’

# Unify Your Data Estate





# Microsoft Fabric

The unified data platform for the era of AI



**Data  
Factory**



**Analytics**



**Databases  
(Preview)**



**Real-Time  
Intelligence**



**Power BI**



**Partner  
Workloads**



**AI**



**OneLake**



**Purview**



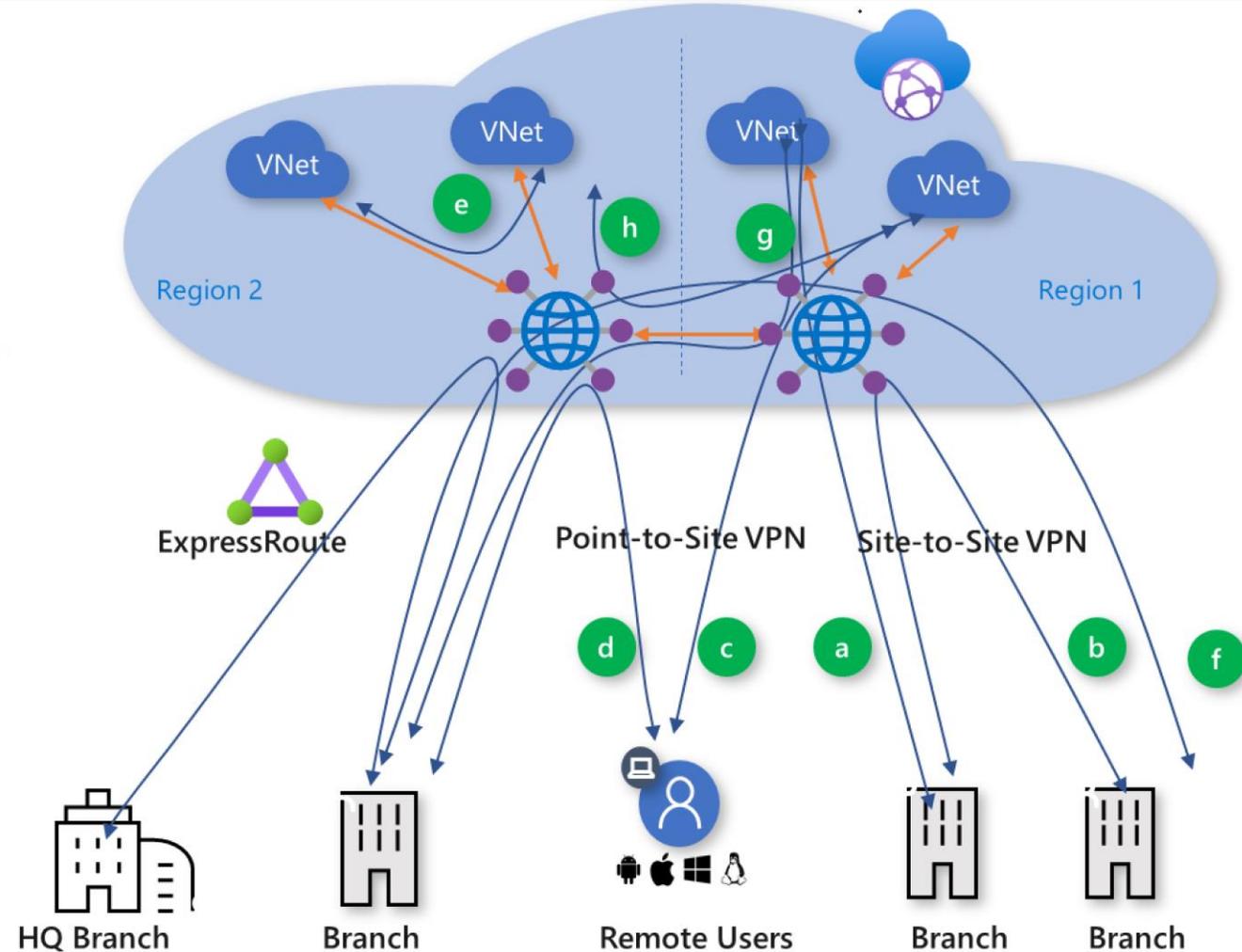
# Networking

# Network Considerations

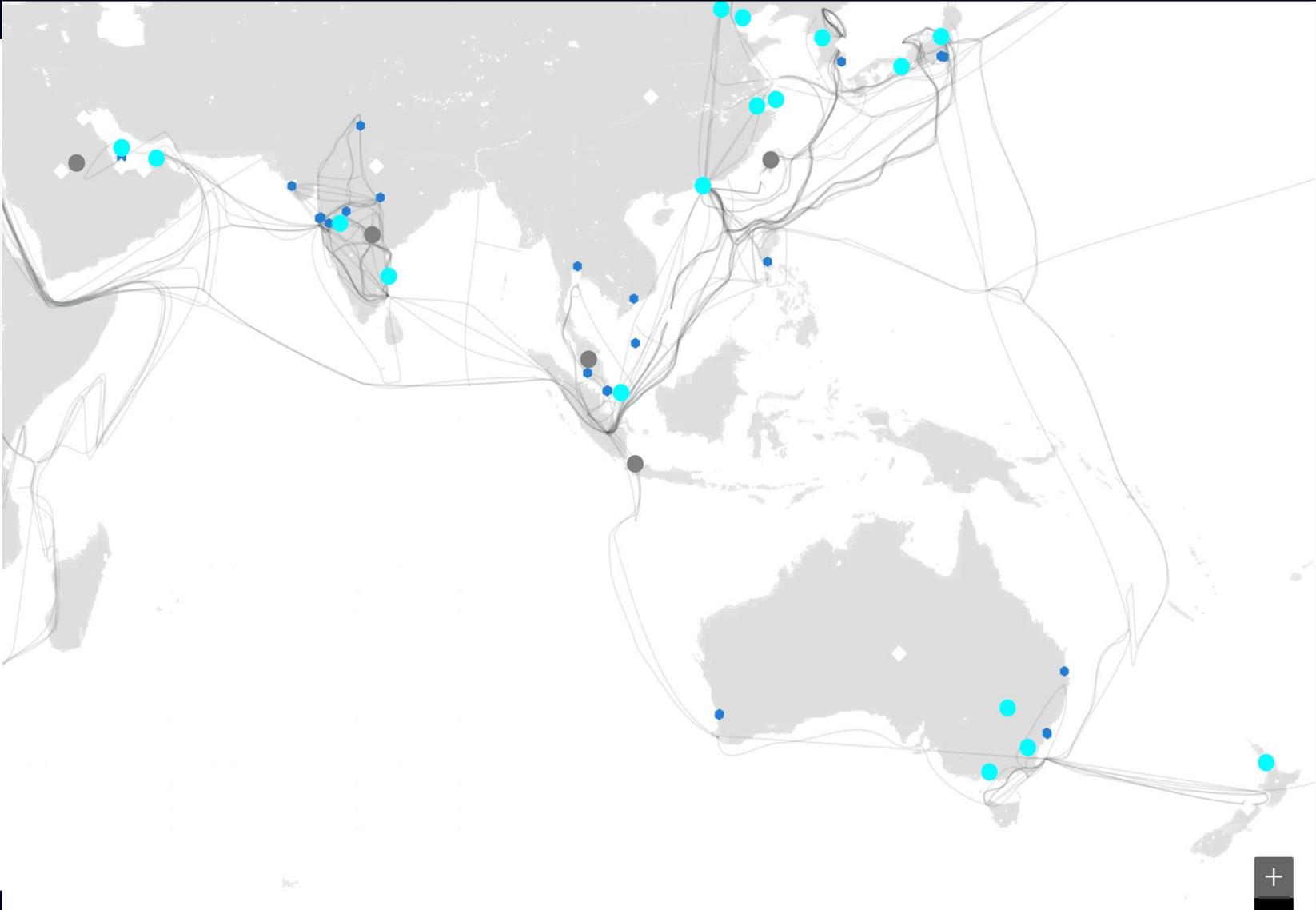
- Azure network topology
- Azure network security
  - Firewall (Azure Firewall, 3<sup>rd</sup> party firewalls)
  - NSG's
  - Azure Front Door services /Application Gateway / Web Application Firewall
  - DDoS
  - Network Watcher
- Private Endpoints and Private Links.
- Azure DNS, DNS Zones, and Private DNS Resolver.

# Azure Virtual WAN (vWAN)

- Combines networking, security, and routing functionality
- Hub and spoke architecture, where spokes can include:
  - Vnets
  - ExpressRoute
  - SD-WAN
  - Site-to-Site or end-user VPN connectivity
- Enables transitive network connectivity between endpoints, leveraging global Microsoft backbone



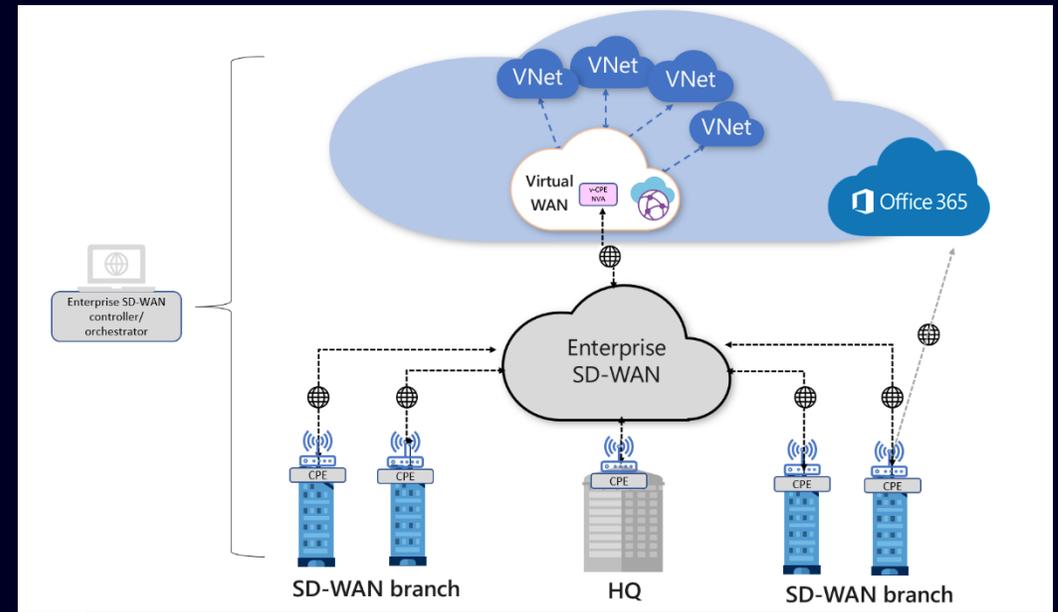
# Networking – Seamless Connectivity

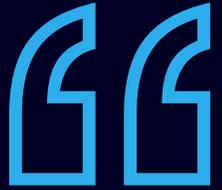


<https://datacenters.microsoft.com/globe/explore/>

# Networking – the Rise of 3<sup>rd</sup> party NVA's

- 3<sup>rd</sup> Party Firewalls (e.g. Palo Alto NGFW)
  - Supporting centralised management of firewalls across Azure, on-premises, and other clouds
  - Can be available as a VM based appliance or PaaS service
- SD-WAN
  - Providing integration into SD-WAN (Cisco, Meraki, etc.)





# Security and Compliance

# Security Operations / SOC

**Microsoft Security Experts**  
Defender Experts | Detection and Response Team (DART)

**Managed Security Operations**  
Using Microsoft Security

**Microsoft Defender XDR**  
Unified Threat Detection and Response across IT, OT, and IoT Assets  
Incident Response | Automation | Threat Hunting | Threat Intelligence

Microsoft Security Copilot (Preview)

**Microsoft Sentinel**  
Cloud Native SIEM, SOAR, and UEBA

<b>Cloud</b> Azure, AWS, GCP, On Prem & more	<b>Endpoint</b> Workstations, Server/VM, Containers, etc.	<b>Office 365</b> Email, Teams, and more	<b>Identity</b> Cloud & On-Premises	<b>SaaS</b> Cloud Apps	<b>Data</b> SQL, DLP, & more	<b>OT/IoT</b> devices	<b>Other</b> Tools, Logs, & Data
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# Cybersecurity Reference Architecture

Security modernization with Zero Trust Principles

[aka.ms/MCRA](https://aka.ms/MCRA)

# Software as a Service (SaaS)

**Microsoft Defender for Cloud Apps**

- App Discovery & Risk Scoring (Shadow IT)
- Threat Detection & Response
- Policy Audit & Enforcement
- Session monitoring & control
- Information Protection & Data Loss Prevention (DLP)

**Microsoft Entra Internet Access**

**Identity & Access**

**Conditional Access** – Zero Trust Access Control decisions based on explicit validation of user trust and endpoint integrity

# Endpoints & Devices

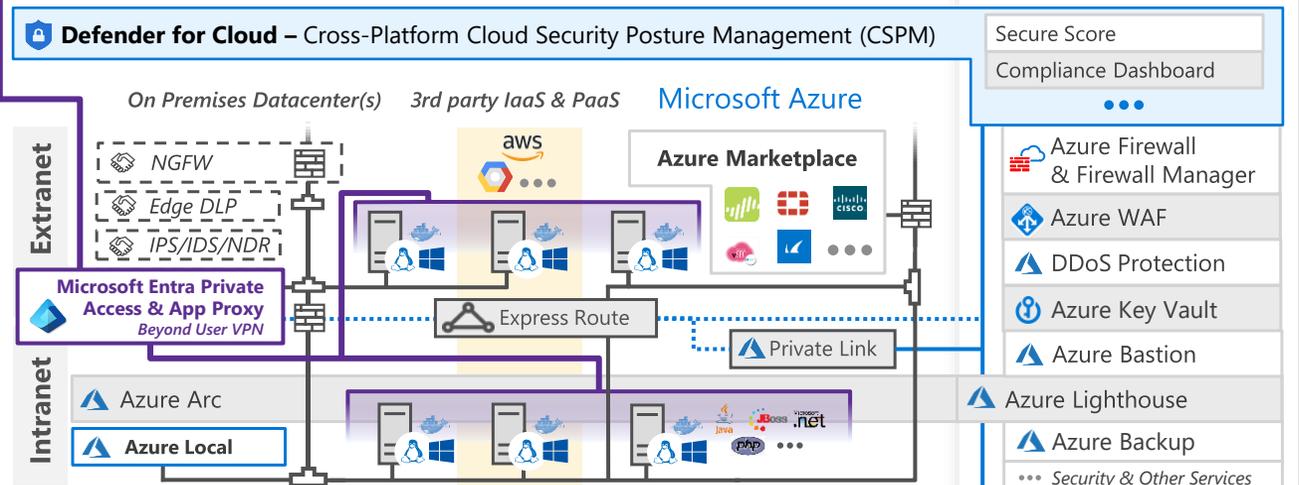
**Unified Endpoint Management (UEM)**

Intune | Configuration Manager

**Microsoft Defender for Endpoint**  
Unified Endpoint Security

- Endpoint Detection & Response (EDR)
- Web Content Filtering
- Threat & Vuln Management
- Endpoint Data Loss Protection (DLP)

# Hybrid Infrastructure – IaaS, PaaS, On-Premises



# Information Protection

**Microsoft Purview**  
Information protection and governance across data lifecycle

Classification Labels: Monitor, Discover, Classify, Protect

**File Scanner** (on-premises and cloud)

Data Governance  
Advanced eDiscovery  
Compliance Manager

# Microsoft Entra

Passwordless & MFA

- Hello for Business
- Authenticator App
- FIDO2 Keys
- Entra ID Protection: Leaked cred protection, Behavioral Analytics
- ID Governance
- Microsoft Entra PIM
- External Identities

**Defender for Identity**

Active Directory

**Securing Privileged Access** – [aka.ms/SPA](https://aka.ms/SPA) | **Entra Permission Management** – Discover and Mitigate Cloud Infrastructure Permission Creep | **Privileged Access Workstations (PAWs)** - Secure workstations for administrators, developers, and other sensitive users

**Security Posture Management** – Monitor and mitigate technical security risks using [Secure Score](#), [Compliance Score](#), [CSPM: Defender for Cloud](#), [Microsoft Defender External Attack Surface Management \(EASM\)](#) and [Vulnerability Management](#)

**Windows 11 & 10 Security**

- Network protection
- Credential protection
- Full Disk Encryption
- Attack surface reduction
- App control
- Exploit protection
- Behavior monitoring
- Next-generation protection

**IoT and Operational Technology (OT)**

**Azure Sphere**

**Microsoft Defender for IoT (and OT)**

- ICS, SCADA, OT
- Internet of Things (IoT)
- Industrial IoT (IIoT)
- Asset & Vulnerability management
- Threat Detection & Response

**Defender for Cloud** – Cross-Platform, Multi-Cloud XDR  
Detection and response capabilities for infrastructure and development across IaaS, PaaS, and on-premises

**Defender for APIs (preview)**

# People Security

Attack Simulator | Insider Risk Management | Communication Compliance

**GitHub Advanced Security & Azure DevOps Security**  
Secure development and software supply chain

# Azure Security and Compliance

Secure Privileged Access

Entra ID | MFA | Conditional Access | Privileged Identity Management | Break Glass

Encryption and Keys

Encryption in transit / at rest, Key Management Services, Certificate Management, Audit Usage

Security Logging and Alerting

Azure Log Analytics, Sentinel, Defender for Cloud

Vulnerability Management

Azure Update Management, Vulnerability Assessment

Security Controls

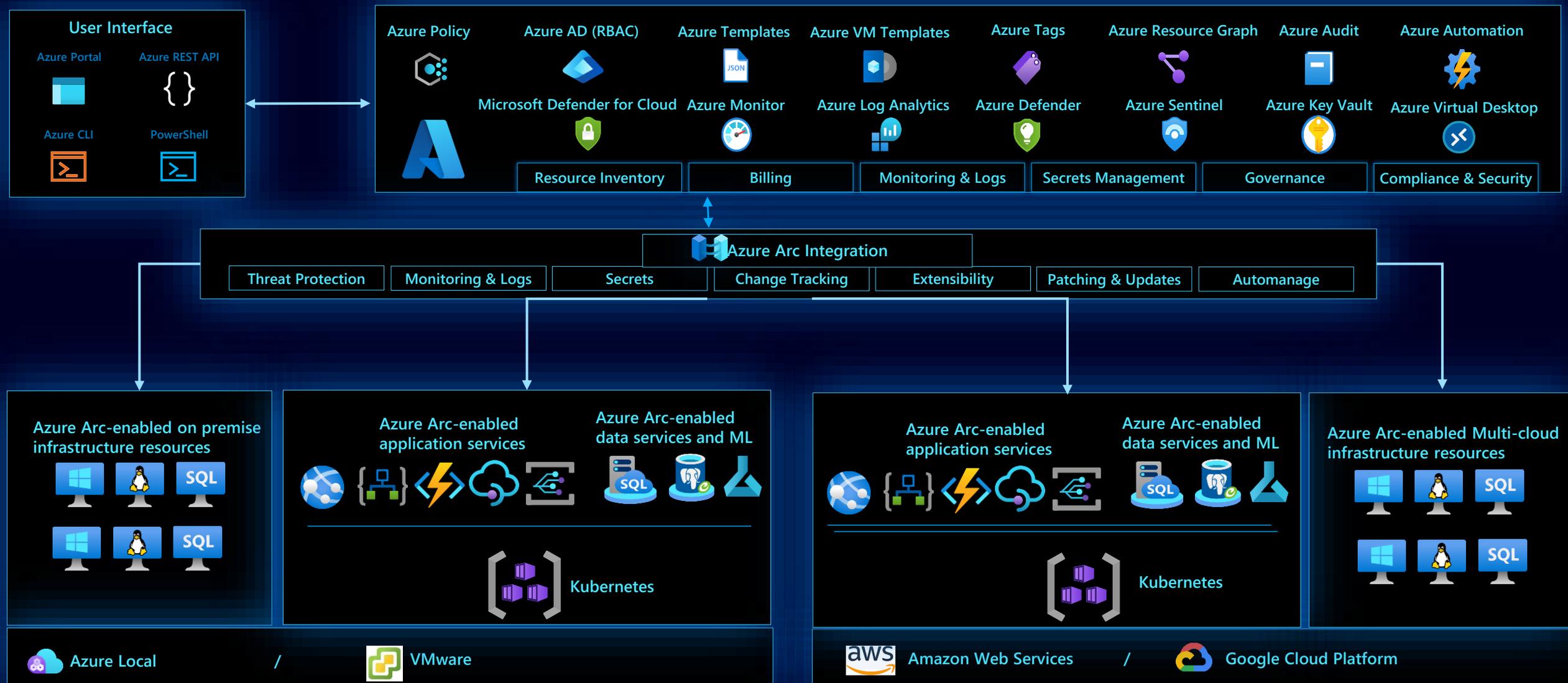
Azure Policy, Microsoft Cloud Security Benchmark, Built-in compliance initiatives, Defender for Cloud

Edge and Network Security

Azure Front Door Services, App Gateway, APIM, Azure Firewall



# Management



# Optimising Investments – Cost Management





# AI Applications

# Azure AI Foundry



Copilot Studio



Visual Studio



GitHub



Azure AI Foundry SDK



## Model Catalog

Foundational models

Open-source models

Task models

Industry models



Azure OpenAI Service



Azure AI Search



Azure AI Agent Service



Azure AI Content Safety

Evaluations

Customization

Governance

Monitoring

## Observability

[Data#3 Azure Periodic Table of Elements](#)

Search Azure Service

Choose category

Entra ID	Entra Domain Services	
Entra ID B2C	Entra ID B2B	Managed Identity
Work Account	Microsoft Account	Continuous Access Evaluation
Identity Governance	MFA	Conditional Access
Key Vault	Regulatory Compliance	Resource Guard
Sentinel	Defender for Cloud	Azure Firewall
	Front Door	Application Gateway
ExpressRoute	Virtual Network Gateway	

# Data#3 Azure Periodic Table of Elements

## Azure OpenAI

Last Updated: 10th March 2025

### Azure OpenAI Service: Unlocking the Power of Advanced AI Models

#### Technical Overview

Artificial Intelligence (AI) has become a cornerstone of modern innovation, and Microsoft Azure OpenAI Service is at the forefront of this revolution. By integrating OpenAI's cutting-edge models into the Azure ecosystem, organisations can leverage state-of-the-art natural language processing (NLP), computer vision, and generative AI capabilities to solve complex business challenges. Let's dive into the technical architecture and explore the advanced models available in Azure OpenAI Service, including GPT-4.5, GPT-4 Turbo, GPT-4o, DALL-E, Whisper, and more.

#### Architecture and Scalability

Azure OpenAI Service is built on Azure's robust cloud infrastructure, ensuring enterprise-grade scalability, reliability, and security. The service operates as a managed API, enabling seamless integration into applications without requiring deep expertise in AI model training or deployment. By leveraging Azure's global network of data centres, the service provides low-latency access to AI models, ensuring high performance even for demanding workloads.

The architecture is designed to support multiple AI models, each optimised for specific use cases:

- GPT-4.5 and GPT-4 Turbo:** These models represent the pinnacle of generative AI, offering unparalleled capabilities in text generation, summarisation, and conversational AI. GPT-4 Turbo is a more efficient variant, designed for high-throughput applications.
- GPT-4o:** A specialised version of GPT-4 optimised for audio-based applications, such as transcription and voice-to-text processing.
- GPT-3.5:** A highly capable model for tasks requiring advanced language understanding, such as content creation, sentiment analysis, and code generation.
- DALL-E:** A generative AI model for creating images from textual descriptions, enabling innovative applications in design, marketing, and content creation.
- Whisper:** A state-of-the-art model for automatic speech recognition (ASR), supporting multi-language transcription and translation.
- Embeddings:** These models are designed for semantic search, recommendation systems, and clustering tasks, providing vector representations of text for advanced analytics.
- Fine-tuning Models:** Azure OpenAI allows organisations to fine-tune models on their proprietary data, ensuring outputs are tailored to specific business contexts.
- Assistants:** Pre-configured conversational agents built on GPT models, designed for customer service, virtual assistants, and other interactive applications.

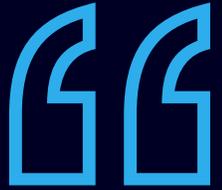
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 Microsoft Product Overview  
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Listen to Overview

IoT Central	Machine Learning	Azure OpenAI
IoT Digital Twin	Search	Cognitive Services
Microsoft Fabric	Language	Bot Services
Databricks	Speech	Anomaly Detector
Purview	Translator	Vision
Analysis Services	Content Moderator	Document Intelligence
Synapse	Personaliser	Immersive Reader
Data Box	Storage Sync	Video Analyser



# Getting Started

# We're here to help:

## Azure Landing Zone:

- Cloud Strategy and Architecture
- Azure Foundation (Landing Zone) Deployment
- Azure Health and Governance Assessments

## Data:

- Enterprise Data Strategy
- Data Planning, Capability Workshops, and Roadmaps
- Data and Analytics Design, Proof-of-Value
- Data and Analytics Platform Foundations

## Security and Compliance:

- Strategy, Maturity Assessment, Data Governance, Architecture, Regulatory Compliance, Workshops
- Health Assessment
- Sentinel and Defender for Cloud Deployment
- Managed Security (Managed Firewall / Managed Sentinel / Managed XDR / SOC)

## Network

- Design and deployment of virtual network topology and configuration (incl. vWAN)
- Hybrid connectivity using ExpressRoute/SDWAN/Site-to-site VPN
- Network security (Azure Firewall/NSG's/3<sup>rd</sup> party firewalls)

## Management

- Design and deployment of management and monitoring services
- Azure Managed Services
- Azure Cost Management

## AI

- AI Planning, Use Case Workshops, Capability Roadmaps
- AI Solution Design, Proof-of-Value, Pilot
- AI Platform Foundations

**We're here to help:**

Use QR Code or URL below.  
Click 'Talk to Us'



<https://www.data3.com/partners/microsoft/azure/>

# AI-Ready Infrastructure – Get ready!

Align  
Landing  
Zone to  
CAF/WAF



Azure  
Landing Zone

Prepare  
your  
data



Azure  
Fabric

Extend,  
segregate,  
secure your  
network



Azure  
Network

Review  
security  
and  
compliance



Security and  
Compliance

Leverage  
management  
capabilities  
and define  
policies



Azure  
Management

Start  
building!



Azure AI  
Applications

# Data#3



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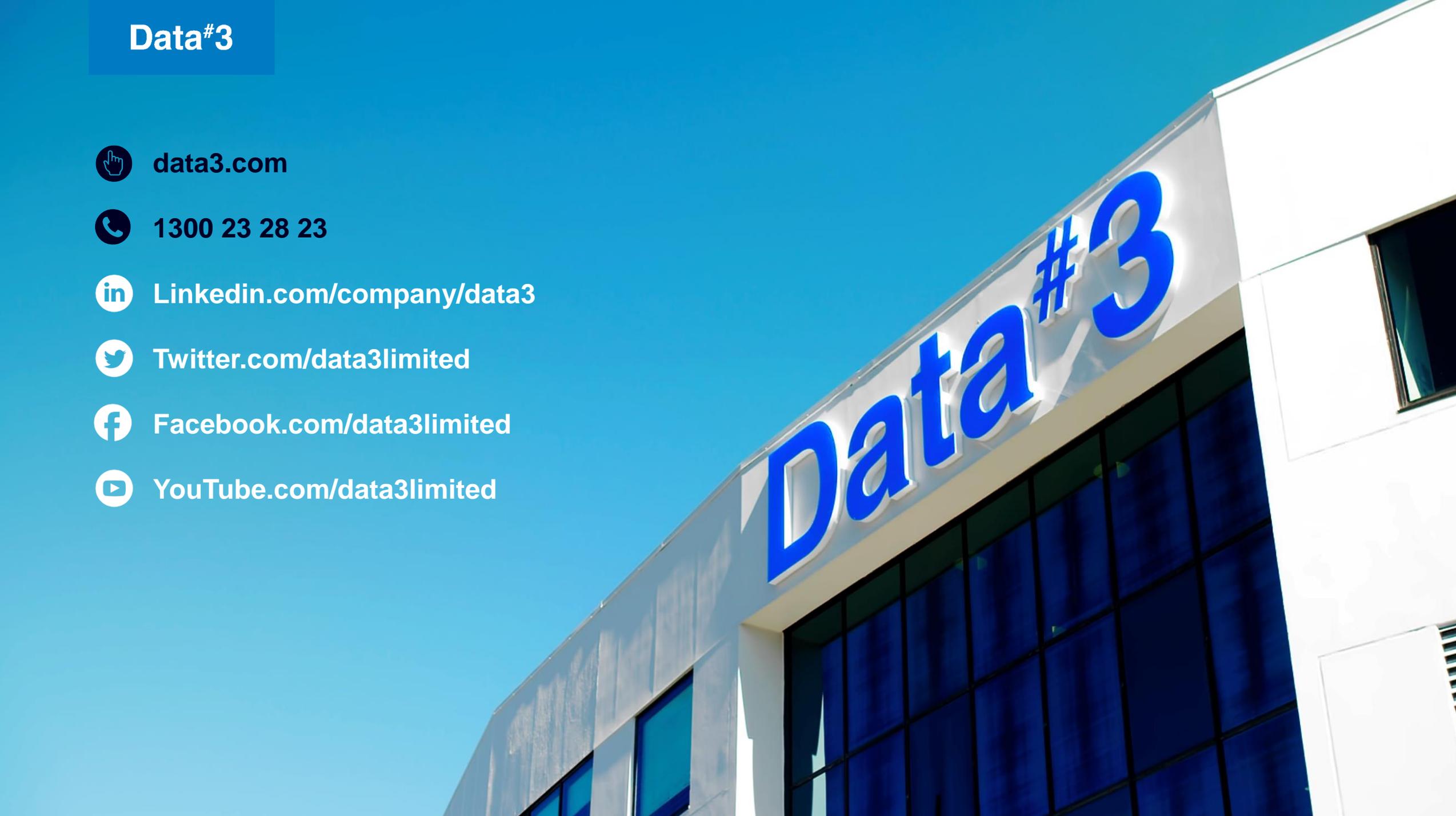
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[Facebook.com/data3limited](https://www.facebook.com/data3limited)



[YouTube.com/data3limited](https://www.youtube.com/data3limited)

A photograph of a modern building with a large, illuminated sign on its facade. The sign reads "Data#3" in a bold, blue, sans-serif font. The building has a white upper section and a lower section with large glass windows. The sky is a clear, bright blue.

**Data#3**